



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,638	12/28/2001	Ranjit Gharpurey	TI-33516	5650

23494 7590 09/23/2005

TEXAS INSTRUMENTS INCORPORATED
P O BOX 655474, M/S 3999
DALLAS, TX 75265

EXAMINER

LE, NHAN T

ART UNIT PAPER NUMBER

2685

DATE MAILED: 09/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/032,638

Applicant(s)

GHARPUREY ET AL.

Examiner

Nhan T. Le

Art Unit

2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-23 is/are allowed.
- 6) ☒ Claim(s) 1,6-11,16 and 17 is/are rejected.
- 7) ☒ Claim(s) 2-5 and 12-15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 6, 11, 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al (US 5,513,387) in view of Li et al (US 6,843,597).

As to claim 1, Saito teaches a gain control system, comprising: a plurality of gain control circuit (see fig. 11, numbers 7-10, col. 6, lines 36-56) that receives a gain control input signal from associated digital circuitry and generates a control signal in response to changes in the gain control input signal. Saito fails to teach delay circuitry that receives the gain control input signal and outputs a delayed gain control signal according to the gain control input signal and a speed up circuit. Li teaches where the control circuit reduces the time required to bring a received signals within the operating range of operation amplifier i.e. the speed up circuit (see col. 3, lines 33-67, col. 4, lines 1-7, lines 51-62), a delay circuitry that receives the gain control input signal and outputs a delayed gain control signal according to the gain control input signal (see col. 9, lines 23-28, col. 11, lines 52-57). Therefore, it is obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Li into the system of Saito in order to improve AGC convergence speed without the increased size and cost that result from the unnecessarily redundant circuitry (as suggested by Li col. 3, lines 52-60).

Art Unit: 2685

As to claim 6, the combination of Saito and Li teaches the filter network comprising at least one variable gain amplifier (see Saito fig. 11, number 2, col. 6, lines 36-56) operative to amplify an input signal according to a gain selected based on the delayed gain control signal.

As to claim 11, Saito teaches a directed receiver, comprising: a variable gain amplifier operative to amplify an input signal derived from a radio frequency (RF) signal, the gain of the amplifier being adjustable based on a gain control signal from an associated digital system (see fig. 11, numbers 2, 7, col. 2, lines 40-60, col. 6, lines 36-56). Saito fails to teach a filter operative to filter an amplified signal of the amplifier and provide a filtered output signal; control system that generates a control signal in response to changes in the gain control signal from the associated digital system and, the control system providing the control signal to the filter to adjust filter characteristics of the filter and the control system is the speed up control system. Li teaches a filter operative to filter an amplified signal of the amplifier and provide a filtered output signal (see fig. 1, number 27, col. 4, lines 24-38) and a control system that generates a control signal in response to changes in the gain control signal from the associated digital system and, the control system providing the control signal to the filter to adjust filter characteristics of the filter (see col. 4, lines 24-38) and the control system is the speed up control system (see col. 3, lines 33-67, col. 4, lines 1-7, lines 51-62). Therefore, it is obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Li into the system of Saito in order to improve AGC convergence speed

Art Unit: 2685

without the increased size and cost that result from the unnecessarily redundant circuitry (as suggested by Li col. 3, lines 52-60).

As to claim 16, the combination of Saito and Li teaches a delay system (see Saito col. 8, lines 18-29) operative to impose a delay associated with changes in the gain control signal and provide a corresponding delayed gain control signal to adjust the gain of the variable gain amplifier.

As to claim 17, the combination of Saito and Li teaches a network in which comprises a delay (see col. 9, lines 23-28, col. 11, lines 52-57) and low pass filter (see fig. 1, number 27, col. 4, lines 24-38).

2. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al (US 5,513,387) in view of Li et al (US 6,843,597) further in view of Rahman et al (US 6,560,447).

As to claim 7, the combination of Saito and Li teaches the filter network further comprising at least one filter operatively coupled to receive the amplified signal from the amplifier, the associated filter having a filtering characteristic that varies based on the speed-up control signal. Rahman teaches one filter operatively coupled to receive the amplified signal from the amplifier, the associated filter having a filtering characteristic that varies based on the speed-up control signal (see col. 4, lines 37-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Rahman into the system of Saito and Li in order to maximize the saving (as suggested by Rahman col. 4, lines 43-45).

As to claim 8-9, the combination of Saito, Li and Rahman teaches the filter comprising a high-pass filter and the filtering characteristic comprising a corner frequency of the high-pass filter (see Rahman col. 4, lines 37-65).

As to claim 10, the combination of Saito, Li and Rahman teaches section of a direct conversion receiver (see Saito col. 2, lines 40-60).

Allowable Subject Matter

Claims 2-5, 12-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding to claims 2, 12, the applied reference fails to teach a differentiator that receives the gain control signal and provides a differentiated signal as a function of the gain control signal; and a pulse generator that generates the speed-up control signal based on the differentiated signal indicating a change in the gain control signal.

Claims 18-23 are allowed.

Regarding to claim 18, Saito et al (US 5,513,387) teaches automatic gain control circuit, Li et al (US 6,843,597) teaches adaptive automatic gain control, Medvid et al (US 6,741,844) teaches receiver for audio enhancement and method thereof, Hofmeister (US 4,249,252) teaches time frequency recovery. The teaching of these prior arts either combine or alone fails to teach an analog speed-up control system for a direct conversion receiver, comprising a differentiator that receives a gain control signal from associated digital controls and provides a differentiated signal as a function of the gain control signal; and a pulse generator that generates the speed-up control signal

Art Unit: 2685

based on the differentiated signal so as to control a filter characteristic of at least one associated filter.

Dependent claims 19-21 are allowed for the same reason.

Regarding to claim 22, Saito et al (US 5,513,387) teaches automatic gain control circuit, Li et al (US 6,843,597) teaches adaptive automatic gain control, Medvid et al (US 6,741,844) teaches receiver for audio enhancement and method thereof, Hofmeister (US 4,249,252) teaches time frequency recovery. The teaching of these prior arts either combine or alone fails to teach a method for implementing speed-up mode control for an analog portion of a direct conversion receiver based on an input gain control signal provided by an associated digital portion the receiver, the method comprising differentiating the input gain control signal to provide a differentiated signal; generating a speed-up control signal based on the differentiated signal indicating a change in the input gain control signal.

Dependent claim 23 is allowed for the same reason.

Response to Arguments

Applicant's arguments with respect to claims 1-23 have been considered but are moot in view of the new ground(s) of rejection.

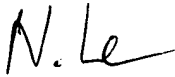
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T. Le whose telephone number is 571-272-7892. The examiner can normally be reached on 08:00-05:00 (Mon-Fri).

Art Unit: 2685

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Nhan T. Le



9-18-2005

NGUYEN T. VO
PRIMARY EXAMINER